1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

511 superfluous needs to be dispensed with every time camp is moved,
361 which occurs every few days. Only in thoughts and feelings can they be as rich as any other people; but this requires a particular kind of temperament possessed by only a few individuals in the tribe.

• 182 Their economic life, social organization, mythology, and religion form a well-knit pattern of existence. There are no loose ends, but a knot here and there appears in the form of vagueness or contradiction. But I think that the fault lies with us who would introduce our type of organization into their knowledge. We expect more from a primitive group than we ourselves could offer. Besides, it is doubtful whether we ever present the picture of their culture as they see it; if we did we might not understand or we might even be surprised at its orderliness.

177 Although the Yaruros have been in touch with Euro-American cul-
121 ture for several centuries they have borrowed remarkably little. What culture they possessed several centuries ago we do not know. There is practically no information about them in the literature. There is justification, therefore, in publishing this record, in spite of many apparent deficiencies. Since plans for another visit to fill in the gaps in my field notes have not materialized and the Yaruros may be gone before another ethnologist can live with them it seems advisable to make this material available.

121 Anthropology, among other things, is concerned with the interrelationships of groups of men and with the functions of social structures as developed by man and his environment. I have tried to keep in mind that in presenting a first account of an unknown people it may not be at all out of place to draw a general but intimate picture of the daily life of the Yaruros, their emotional, cognitive and conative responses to the world about them, and even their attitude toward the ethnologist who appeared among them with only the objective of hold-
123 ing friendly conversations about themselves. At first they were suspicious, but they soon caught the point and enjoyed the experience as much as I did. An attempt has been made to give these pictures, and to explain the series of events which made possible with these nomads the intimate association that followed the first few days of unfriendliness.

124 No attempt has been made to reconcile differences in the information
128 obtained from various informants, not even if there is a contradiction. It was the first time that the Yaruros had been asked to organize their knowledge of their own culture; contradictions and vagueness were to be expected. My informants were exclusively men, even for those
123 phases of culture which admittedly belong to the female world. A cultural obstacle which I respected prevented any direct social intercourse with the women. The women's domain is respected by the

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

603 604 educate and to assist him. However, his grandchildren belong to his own moiety and the children of his daughters will be born in this camp and will live with him until the boys are old enough to seek wives in the other moiety. The bonds linking these nephews, uncles, grandparents, and grandchildren are morally strong and perhaps it explains why Kuma herself is thought of as being the grandmother of Hatchawa, rather than the mother. Several myths illustrate this uncle, nephew, grandfather, and grandchild relationship. It is curious to note that occasionally the uncle in these myths plays tricks on the nephew and may even be represented as being exceedingly wicked, but the grandfather is always benevolent.

[591] The children of a man's sons are brought up in a different hunting group, since the boys will live with their wives' groups, and although these grandchildren belong to the same moiety, the old man's contact with them is rather limited. It is different with the children of his daughter.

●182 582 The basis of Yaruro social organization is cross-cousin marriage. Each hunting group tends to consist of one family and other groups hunting nearby are probably closely related to it. The chance of a member of one group meeting members of a group hunting far away from his hunting grounds would be quite insignificant. It would appear, therefore, that a Yaruro man would have the option to marry

[584] his sister's cousins, aunts, grandchildren, and grandparents. Of these it is considered incest to marry his sisters, his mother, and the sisters of his mother, whom he calls mother also, the children of his father's brothers, whom he calls father, and the children of his mother's sisters, whom he calls sister also. The only two classes of women whom he can legitimately marry are the daughters of his mother's

[616] brothers and the daughters of his father's sisters. The latter, however, belong to the same moiety as himself and are therefore excluded. His choice is restricted to the daughters of his mother's sisters.

However, a number of factors may enter to allow a man a wife other than his cross cousins on his mother's side, and in fact in some cases he is forced to marry others than his cross cousins on his mother's side, who may not be available. Theoretically he may marry any of the following: His father's sisters, his father's mother's sisters, his daughters' daughters, his wife's sisters, his wife's mother's sisters, and his wife's mother's mother and her sisters. We find in actual practice that this is done. At Landaeta there was one young man married to a woman of about 40 whom we would call his aunt-in-law, that is, his wife's mother's sister.

587 This class of women whom he is allowed to marry he is also obligated to look after should their husbands die. For instance, should

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

838 572 among ourselves. Also, it is true that these acts are never to be seen between man and woman. For instance, I remember young men loafing at my camp with their arm around each other's necks, and even clasped in a tight embrace face to face in each other's arms, though standing up. I never observed any physical sexual excitement, though.

EDUCATION OF CHILDREN

861 858 There is no direct and organized teaching of the children. They learn from example and from the precepts laid down by the adults in discussions, generally held at night. Certainly the child is not made to feel that he is the center of attraction; rather he is tolerated, though watched with fond eyes by the adults. The children are never admonished to do this or that or negatively. It may be said that they are put into a pattern of behavior, and the bonds of this pattern are indeed close and strong. There is no breaking them as long as life lasts. It must not be thought that these bonds are felt and 181 that there is resentment toward them. The Yaruro is in a sense tremen- 156 dously individualistic, in that each individual is forced to depend on his own resources, but when it comes to group life he is merely a part of the whole.

861 851 The children are free to play, but from infancy they also share in the adult activities. A mother may make a basket, with the little daughter constantly beside her. As soon as the child is able she will help in the digging of roots, or placing them in the basket, or will help in the making of a basket, or the cooking, her share of the work gradually increasing as she grows older. However, a child is never told to do any work, but does so entirely imitatory of the adults and the older children, with complete freedom as well as free desire.

The boy in like manner imitates the older boys and the men. His games consist of constant practice with bow and arrow, but this play is done only in the late afternoon and in the evening. During the day, as soon as the child is able to do so it will accompany the mother or father in hunting for food, doing its share of the paddling, loading and unloading of the canoe, helping to carry the food, taking care of the dogs, and watching and trying to make bows and arrows, string, etc.

GROOMING

Yerkes writes of grooming as follows:

182 515 Grooming is used in this report to designate a pattern of social behavior whose essential features are visual examination, search and manipulation of the skin and hair of a companion with fingers and lips, removal of dirt, dandruff, scabs, parasites, and other extraneous materials, and their conveyance to the mouth of the groomer, whose lips, tongue, and jaws meanwhile may have

1: Petrullo E-3 (1933-34) 1939 SS19 Yaruro SS19

182 515

been in motion, with sound production, as if in anticipation of something to be swallowed. Commonly, swallowing ensues, if the object is not disagreeable. Such behavior is conspicuous in chimpansee, which for purposes of comparison will be used in this report as type. Such familiar expressions as fleapicking, hairdressing, skintreatment, toiletmaking, frequently are used to refer to forms or aspects of the pattern of primate behavior which has been described.

Grooming is a biological habit, and like all such habits can either be perpetuated by a culture or smothered, "repressed". Among the very primitive peoples of South America I have seen habits that approximate the definition given by Yerkes. Delousing is the most common form. The lice are generally picked off and crushed between the teeth. Ticks that cover one in great numbers are likewise taken off. In this the subject of the attention generally sits very quietly, while the performer acts with evident pleasure. He or she may talk and jest much more than the subject.

515 Among the Yaruros the most common forms of social grooming are the removal of lice, ticks, and the crushing of insect-bite blisters. For this latter function carved sticks are used. One end of it is used to search for the lice and to crush them and the other end is used for the blisters. This attention is generally given by the mothers to the children and the wives to their husbands, generally on the return from the day's hunt. I myself have been the recipient of such attention from Yaruro women. Not having a wife of my own, my sisters by courtesy, or adoption, took care of my body.

182 515 It is difficult to say that the talk, jesting, smiles, that accompany these attentions are a result of the biological instinct. I am inclined to think that the culture pattern is here at work with its attendant repressions. For instance, often I have seen grimaces on the faces of the performer, the subject, and even of those standing about when a louse is crushed or a blister is broken. Is this a purely biological reaction or does it follow the pattern of conduct? Even primitive peoples are slaves to culture.

RELIGION AND SHAMANISM

THE YARURO WORLD

185 775 Uppermost in the Yaruro consciousness is their conviction that they are faced with extinction—that Kuma exists and that she is waiting for them in her land. It was easy to prevail upon my informants to talk about Kuma and the world to which they will go upon dying. The other phases of their beliefs were difficult to bring to their attention, for the Yaruro life in this world has practically ceased. As a group, the desire to live and to continue has died. They see the hopelessness of any struggle to preserve their traditional

311 In short, the habitat conditions are as follows, given that the Cinaruco
22 Yaruro have a technology including hunting, gathering, fishing, and animal husbandry, and horticulture. All resources are found within a narrow band of about 4-5 miles between the Cinaruco river and the high sand dunes occurring in the interfluve to the north, in which only an occasional deer is found. Within this space there are three major resource areas distinguishable: 1) the open savanas for hunting and gathering, the former involving much greater dispersion of resources than the latter and consequently quite different techno-social conditions. Both activities change location markedly with the seasons.2) The rivers and *caños* are used for water-animal hunting and for fishing. Fishing also displays a seasonal shift between river and *caño*, whereas river hunting for alligator and turtle becomes totally impracticable in the wet season. 3) The wooded areas, themselves dispersed, include the gallery forests of smaller streams where flooding is limited but water
[241] and soil abundant and the *montes* occurring here and there in mid-savana. These areas provide the Yaruro with garden sites. Away from the streams, there are also occasional tiny patches of suitable soil not close enough to the water table for dry season use, but which get enough rain to be used for planting of seasonal crops in the wet season. Schematically, the situation is shown on Table II_1, a list of foods entering into Yaruro economy and their relative seasonal occurrences, and on Maps I and II_2 of the seasonal locations of these resources.

● 182 The particular relationship between a peculiar habitat, such as the one we have just described, and the technology operating within it, here preponderantly a swidden technology, sets upper limits to territorial, socio-economic, or cultural expansion, and limits to changes in socio-cultural forms. With regard to the habitat dimension of the relationship, we may
[121] say in Harris's words, "Limitations imposed by the manner in which plants and animals convert solar energy into comestible material in combination with the availability of land and water resources, the rate of reproduction of the natural biota, and the total ecological balance, furnish conditions unalterable by individual or collective whim", at least with the given level of technological development possessed by the Yaruro. The Yaruro are in no position to change the total ecological balance, to increase the carrying capacity of the land or water for plant or animal species. For
182 example, under the llanos conditions, the use of slash-and-burn horticulture exhausts arable land at a rate greater than it recovers. The proportion of
241 land held in reserve for future cultivation must be several times greater
311 than that under cultivation at any given moment, the proportion varying with such factors as the rate of fertility recovery, the type of weed and grass invasion, the rate of growth of the secondary forest, the rate of mechanical reconstruction of the soil, and so on. Thus of the total amount of land potentially available in a given expanse of territory, only a part can be horticulturally exploited at any one time. Where the total potentially arable land in a given expanse is itself only a small proportion of the total area, the amount of land available for cultivation at any one moment is, of course, minute. This ecological balance in turn limits the human population

1[1] [See pp. 31-39, category 116 -- Analyst]
1[2] [See pp. 40-41, Category 102 -- Analyst]
1[3] [for footnote, see p. 42, category 116 -- Analyst]

and socio-economic forms. Nor can any immediate desire or fancy of the Yaruro change the limitations which the ecological relationship imposes: the carrying capacity of the land for horticultural food plants has, with the given technology, a fairly fixed upper limit. That such limitations exist for their horticulture is recognized by the Yaruro themselves to some extent. First, they recognize that, given the types of soils extant in the habitat, only certain kinds of crops can be used in certain places. Their knowledge in this regard seems to be quite accurate, and, of course, determines where a garden will be prepared at any given time according to projected needs, existing resources, and past exploitations. Again, they know that a swidden lasts three years, a fact not only confirmed by the evidence of conditions in recently abandoned patches but also by the results of soil analyses.[9] After the three years, they say, the swidden must be allowed to fallow for a number of years. They use the word 'five', but the writer believes 'five' is intended to mean 'some' years. The conditions of abandoned gardens, with their rank growth of lush grasses, unmanageable with dibble or machete, and of the places chosen for preparing new gardens, all cut out of relatively large second growth, suggest that the fallow period is at least 10 years, and probably upwards. We shall use 10 years as a basis for calculations below, since after such a time, the shade has driven out the succulent grasses which are replaced by herbaceous plants or woody underbrush. In view of these considerations, it may be said that Yaruro horticultural practices have been well-adapted to the particular soil and water conditions of their habitat on the basis of explicit recognition of these conditions.

Without basic change in their technology, the balance between the Yaruro's present technology and the habitat conditions we have described set real upper limits both on production and on productivity, the latter defined as production per capita per year, and therefore sets limits on the absolute size and the form of the society. Let us suppose optimal population conditions unlike the present continuing depopulation due to western diseases and massacres by Venezuelans were present as an hypothetical ideal state. The tendency of any plant or animal population is to increase until it balances in a stable equilibrium with the available nutritional resources, other factors constant.[10] If the population increases beyond this point, either a portion of the population must seek elsewhere for its food, or a portion must die, or the population will exploit the resources so as temporarily or permanently to reduce them to lower potentials, as in the case of cattle overgrazing pastures. A new land-population equilibrium is then reached at a somewhat lower level. The only other possibility is to innovate new forms of exploitation, a point we return to below.

Under optimal conditions, then, we may estimate maximum Yaruro population within the boundaries of such a territory as presently occupied by the Caño Totúdoro Yaruro of the Central Cinaruco, a territory bounded for all practical purposes by walking-and-working distance from the village. Within this area of about 65 sq. mi. a maximum of about 800 acres, or that 3% of the total area which is wooded, contains all tillable land. However,

[9,10 [for footnotes see p. 42-43, category 116 -- Analyst]

182 241 361 First, through time, the gardens tend to radiate further and further from any given residence point since, given the 13-year planting-fallow cycle, plots near the village will be exhausted. Since the major garden resource areas lie in a crudely east-to-west direction, there will be a slow westward migration of the geographic center of garden activities, enough so that at some point, the village is suspended, as it were, among distant resource points (see Maps), and enhanced by the dispersed nature of the hunting and fishing, and to some extent the gathering, areas. If the "suspension" is weighted more in one direction than another, there will be some tendency either to move the village or to send out temporary or permanent branches of it, respectively in the form of work cottages in the swiddens or in larger long-term house groups which are intermittently occupied. This process is, in fact, easily observed among the Yaruro in existent and abandoned house and subsidiary village sites scattered over the whole territory. Similarly, the locus of gathering, so important in [221] summer, moves further and further from the village. This, together with the considerable shift to fishing and river-hunting in summer, as well as the need for water, causes an extensive seasonal transhumance to occur within the territory. These factors contribute to fissioning as well as to inhibiting the development of permanently located villages, let alone larger aggregations. Thus, with a radiating ecology, a degree of group dispersion and geographical mobility within the territory is to be expected and is indeed characteristic of the Yaruro.

512 Second, if one examines the location of all resources it will be seen that, taken together, they constantly enjoin a dispersal of the labor force in all directions, regardless of season, so that more or less equivalent quantities of labor are being used at the same time in many varying kinds of productive activity independently of each other -- at the peripheries of the territory, in the areas between, or in the village centers themselves, [462] where the women are constantly doing the significantly important work of [252] converting otherwise unusable food resources, like raw, bitter manioc or uncooked corn, into edibles.

476 Third, it will be noted that none of the Yaruro technological processes require cooperative work, even when they may permit it, if it were so desired. On the whole, the productive activities might be described as dispersive of labor, whether it is individuals or small groups of twos or threes who go out to keep each other company. Even the work of preparing [241] the swiddens is carried out individually, though two or three men may [463] work as neighbors in what appears as a single plot. Further, the technology [242] is such as to require no highly specific and difficult or esoteric skills. The most difficult skill to acquire is the knowledge of the soil types and appropriate planting procedures attached to each. Thus, each adult is in 462 a position to learn the inventory of technological knowledge appropriate 463 to his or her sex, and somewhat of that belonging to the other sex too, and to apply it by himself whenever he wants or must. A man, well-instructed in Yaruro technology, could probably subsist alone successfully for long periods of time. One divorced adult man, although he was largely fed by his

mother's and sister's households, nevertheless hunted and harvested for himself, and often cooked for himself meals of the type ordinarily cooked only by women. 462 463

The forms and characteristics of surpluses, as defined by Harris, [16] shed further light on the structure of the ecology. The technological surplus, defined as the difference between total calories annually produced by any definable group and the calories used to produce them, or as the ratio between these two figures, may be estimated at about 8 or 9 to 1 as compared with Harris's estimated figures of 2:1 for the Siriono or 33:1 for the Penetuyut Maya. [17] Since as Harris remarks, the degree of social stratification in a large number of cases correlates with the size of the technological surplus, we would scarcely expect to find social stratification among the Yaruro, nor even any significant ranking. Where the technological surplus is low, the producer's surplus, defined as the difference between total calories produced by any given group and the total calories used by the producers for all purposes must also be low. Therefore the number of persons other than producers who can be supported by the producers is also limited. The producers' surplus may provide an index of the degrees of specialization which might be expected. In the case of the Yaruro one would expect no, or very low, specialization. Again, with a low producers' surplus, one would expect to find a greater proportion of the group involved in production than where such surpluses are high, for otherwise there would be insufficient calories to support more than a few people other than the producers. With a low producers' surplus, one would expect, in general, to find a greater proportion of both sexes engaged in the food quest. This is, of course, born out in the case of the Yaruro. Finally, Harris's harvest surplus is defined as the difference between the amount produced at any given moment, especially at seasonal maxima, and the amount consumed at that time. The actual amount consumable is governed by the seasonal *minima*, since the population cannot rise higher than the food supply at minimum periods permits unless special technological features such as storage, are present. Where the harvest surpluses are of non-storable goods, the population level is in equilibrium with the absolute minima of the harvests. The greater the degree of storability through a nonproductive season, or the less marked a crop is by seasonality, the higher the level to which the minimum population can be raised as compared with the number of people supportable at levels of production comparable to those at the time of harvest. Storability, however, is only one dimension of the harvest surplus. Absolute size of the peak surpluses, their regularity over the years, their distribution in space and time in the annual cycle, their utility in raw form, and the proportion of labor needed to harvest them relative to the time allotted for the harvest are all important dimensions of the harvest surplus. Thus, manioc, the Yauro's chief food resource has no clear peak, is regular over the years (the Yaruro disclaim any famines), is storable both in raw form and in prepared forms, is, in the case of the Yaruro, so located as not to permit of a concentration of labor at any one time and needs no massive labor for harvesting because of short harvest periods. Thus, in general, the very nature of manioc as a crop, and the labor requisites for

121 433 182 [56] [463] [462] [262] [251] [241]

16, 17 [For footnotes see p. 43, category 116--Analyst]

121 182 433 [241] [22] harvesting it, require no centralized authority and render it possible and even probable that the management of production or distribution be carried on without it. The same may be said, on the whole, for all the hunting, fishing, and gathering harvests, a notable and probably permanent feature of Yaruro ecology. Perhaps the only crop which has a marked seasonality is corn, but its absolute size in the total production, its geographical distribution in production, and its position relative to all other harvests renders it insignificant as an effective promoter of managerial functions and [56] formal arrangements of social stratification. It is unlikely, given Yaruro ecology that the forms of surplus would change; consequently their concomitants in social structure would remain constant.

On the basis of the formal characteristics of the ecology and of the surpluses one may deduce an essentially egalitarian social organization, with minimal ranking and leadership and with dispersion of the acts of [56] economic distribution among a number of adult males or females any one of [462] whom may produce a small harvest surplus at any time. With a relatively steady and reasonably comfortable total subsistence base, and with ecological arrangements which are spatially repeated in identical form up 182 and down river, no necessity exists for stringent rules of local exogamy [582] as an institution to regulate the labor force by redistributing its members. One would expect frequent marrying in the village according to the convenience of the contractants, and out-marriages to occur either as economic opportunity offered elsewhere or lack of women at home urged one out. The [562] combined biological and productive role of women, with their particularly important technical roles in gathering and in food preparation, suggest sedentary communities and a matrifocal emphasis in the rules of residence. However, the importance and location of the men's economic contribution [591] might be expected to balance this to a degree so that one might deduce male uxorimatrilocal residence but with other, subsidiary patterns. This in fact occurs, occasional male matrilocality or patrilocality [18,A] comprising the subsidiary residence rules. Political authority would be vested [623] in the community, mainly among its elders, since little or no ranking or stratification is to be expected. In fact, Yaruro socio-political forms, in general, conform to all of these deduced conditions. They represent a model for any society based on the kinds of ecological conditions or form of ecology we have described. Where the ecology is even more restricted the deduced characteristics should be matched even more closely by the observed [171] data. In this respect, the Sirionó, for example, tend to confirm the hypothesis, in that their partial sedentariness which revolves about horticulture is associated with matrifocal social organization: matrilocality and matrilateral cross-cousin marriage. They also possess autonomous local communities. [19,A] The Apinayé also tend to confirm the hypothesis. [20,A]

Where our analysis permits us to predict about the course of the ecological conditions, we should also be able to extend this prediction to the social structure. Since, under the given ecology, we can establish a maximum population for each Yaruro socio-cultural unit, and under the given technology we would expect no significant change in the ecology, no significant

[18,19,20 [for footnotes see pp. 43-44 category 116 --Analyst]]

2:Leeds E-5 (1958)1961 SS19 Yaruro SS19

change of form in Yaruro society would be expected. Changes could occur only by virtue of a changed technology derived either from internal developments or diffusion. 182

It is justified to assert, I believe, that, given the technological and ecological conditions of the Yaruro, internal developments of an evolutionary sort would be unlikely, or, at best, exceedingly slow. It seems to the writer, that the nature of the wet and dry savana soils at least in the Cinaruco area precludes any possibility of cropping by means of slash-and-burn horticulture, or even, to any extent, by modern agricultural means. Therefore development would have been restricted to improvements in the existing technology such as the domestication of new plants or the improvement of old ones grown in the restricted areas along the streams. Maximum surpluses would still have been restricted, and the singular ecological relations of this region would nevertheless have been maintained. Improved fishing techniques might have increased output - the weir, the trap, poisons (used by some groups of Yaruro), nets and seines. fish pools would have increased the fish intake, but there are no salmon runs or the like, here, so that a maximum would soon have been reached in fishing too. 000

Of introduced food plants and animals, the same may be said, unless some plant growing with notable success in the dry sandy savana soils had appeared. However, no such plant was available from any surrounding source and still is not. It is doubtful whether techniques of fertilization could either have been internally evolved or brought in from other peoples which would have made a significant difference to production. In fact, even with a modern agronomical technology, as well as better soils than possessed by either the Cinaruco or Capanaparo Yaruro, the problem of fertilization of their savana lands has not been solved even by contemporary Venezuelans. Had it been possible to develop any form of fertilizer under native conditions, the best that might have occurred would have been to raise the swidden productivity somewhat, thus raising the population. But it is doubtful if it would have significantly changed the forms of surplus, the ecology, or social structure. Conceivably, however, villages might have become larger and more fixed and ranking somewhat more marked.

Among the Yaruro, water control would have been impossible, because the small streams, and even the larger caños, dry up in summer altogether while the rivers are reduced to relative trickles. Any significant irrigation system would have had to have been on such a scale as only a major state could undertake a state of greater proportions and wealth than contemporary Venezuela for example. Even had such been possible, it is doubtfult whether irrigation would have helped the sandy savanas of the Cinaruco, so heavily leached by rain, though water control might well permit a large increase in agricultural productivity in the loamier parts of the llanos. Thus, a major agricultural technique known to relatively near neighbors of the Yaruro was for ecological and social reasons not diffusable.

Finally, warfare, which might have elicited a more hierarchical form of social organization, had not evolved as a Yaruro culture trait. In the 182 72

182 72 first place, the ecological conditions to the north, west, and south were, if anything, more severe than their own, so that there was little advantage to gain by warring in these areas. To the east were the Orinoco highlands, mountainous and heavily wooded country, an ecology quite different from, and probably as difficult as, their own.

182 We may conclude then, that, with the given technology, and under the given ecological conditions peculiar to the Yaruro region, the possibility of evolving to a more advanced tropical forest type like the Kuikuru, or even the Carajá, who in a number of ecological respects are like the Yaruro, was extremely limited. Second, there was little possibility of circumventing this development by directly taking on Circum-Caribbean traits from nearby groups. The Yaruro had to remain, under native systems of [177] subsistence, which did not include the European-derived cattle herding now found in the llanos, at a fixed level of technology, with a fixed ecology, and hence with a fixed form of social structure. Only the recent exposure to cattle herding is breaking up the fundamental form of their economy.

Under any conceivable native conditions, the basic ecological relationships and forms would have had to remain essentially unchanged. We may therefore deduce that the concomitant socio-cultural structure would have had to remain unchanged. Yaruro society was, for ecological reasons, substantially at an evolutionary dead end.

000 With this view of Yaruro ecology and cultural development, we may turn to the question of what conditions of incipient tropical forest horticulture might have provided a foundation for evolution to a higher level. The inhibition of Yaruro development is a result of certain specific ecological limitations. Consequently, where those limitations do not exist or could be removed, one would find, other factors being equal, conditions under which incipient horticultural groups would evolve to higher levels of organization.

Holding technology constant, a much greater per cent of tillable to total land, say up to 50% [21], instead of 0.5%, would allow for an enormous increase in population - up to a hypothetical 12,500-15,000 [22] - which would permit or rather demand, a more elaborate social organization. A marked seasonal fluctuation in the productivity of these lands, that is, in the production of surpluses, would provide a situation in which forms of stratification could appear. A proportionally greater dependence on these food resources requiring intensive labor in order to maximize yield per acre, as in the case of corn or yams, would provide the basis for more elaborate socio-political organization. Thus, manioc which produces the largest tubers in relatively *poorer*, weakly nitrogenous, soils, requires much less effort to produce the several millions of calories per acre mentioned above than do corn and yams in better soils in order to push their productivity up to the maximum half-million calories per acre. Corn and yams appear to produce more with intensive care such as hilling and weeding, as well as the use of bird-watchers, and the like, as the papers on both the Taino and the Sub-Andean which follow clearly indicate. Where manioc will not conveniently grow

[21,22 [For footnotes see p. 44, category 116 -- Analyst]]

4: Leeds E-5 (1958) 1960 SS19 Yaruro SS19

their attention. The shaman's position as link is emphasized by the fact that his wife invariably sits next to him during the *tonghés* to minister to him and to supply him cigarettes and drink. Thus, the socio-economic link of the household is also the unique link between the sexes in ceremonial life.

The various forms of socio-economic and ceremonial division of the sexes is even more remarkably underscored by the existence of female shamanism. As one might expect, shamanesses behave differently from shamans. Shamanesses sing only in the day-t'me. They, like Ku'maⁿ, sing from hammocks whereas men sing sitting on the ground or dancing. Furthermore, messages trasmitted to them from Ku'maⁿ are sent only to them, though the men hear and understand them. The men listen to these messages with care and respect and with the air that there are things to be learned from them which they would otherwise not hear. The shamanesses cannot receive male gods or their messages. Female shaman'sm seems to be an affirmation of the kin-bonds of the matri-centered local group as well as a means of asserting the values and rights pertaining to the women's world. The women's experience ideologically, as well as socially and biologically, is recognized as being systematically distinct from men's experience in life.

Behavior in the *tonghés* is very relaxed. Villagers laugh, joke, sleep, play, get up, walk about. Sometimes persons may even fail to attend if they have chosen to go to work the next day. The only thing explicitly forbidden, because Ku'maⁿ would consider it most indelicate, is sexual intercourse. Otherwise, the lack of formalism and freedom of individual behavior so often noted before is again found here.

The importance of the *tonghés* as the foremost way of reinforcing social relations and communal values as well as for curing is seen in several ways. First, when there has been no *tonghé* for several days, one begins to feel and hear a bruiting for *another* tonghé. It is felt that much time has elapsed since the last *tonghé*. Someone asks what's wrong that we haven't had a *tonghé* in so long. Another says we need a *tonghé*. Rumors of *tonghé* begin to be heard. By the fifth or sixth day another *tonghé* is held and community bonds are again reasserted. Again, the sexual division of labor and social life observed in the other- and hither-worlds is systematically carried through into religious observances. We have mentioned the seating of men separate from women and the separate greetings given to the gods. This theme is carried still further in the exclusive women's shamanism and the equally exclusive capacity of men to do curing, either as shamans or as purely private individuals.

The *tonghé* illuminates much about Yaruro ideology. First, shamans both male and female are not considered authorities possessed of special gifts and prerogatives who interpret lore for the entire community. Rather they are considered merely the comunity religious spokesmen for the public expression of community values and for curing, who, by their own choice, enjoy and are willing to undertake the long, arduous work of training and practice. They reaffirm community bonds by repeating in endless verses the precepts and knowledge contained in the Yaruro ideology. All knowledge and all experience is, at least potentially, open to all members of the community and even the private or personal experience of each is made known to all. Any member of

4: Leeds E-5 (1958) 1960 SS19 Yaruro SS19

the community may do the shaman's work if he chooses, just as any can travel to the other-world or commune with the gods, although, because of age, temperament, or individual taste, not every one does so. There were, in fact, two shamans among the nine men of the writer's village, as well as a number of men who cured and who occasionally sang verse intonations in the *tonghés* although they were not shamans. The shamans are no more than respected community members outside the ceremony. Here again we observe the egalitarianism and individual self-determinism which is so much a pattern of this culture.

The *tonghé* also clearly shows the relationships which prevail between men and gods. The shamans and the other adults of the village converse with the gods in great mutual respect. They do not manipulate them nor minister to them, nor implore them. Before the gods, they are in a position corresponding to active and adept junior members of the village before their elders and especially their lineal ascendants. Furthermore, in a very real sense, no individual person, *qua* person, deals with the gods. The community, with its religious catalyst, the shaman, is the unit of action. The only individual relations with the gods occur in dreams, unconsciousness, and death. Dreams about gods are made public by singing aloud in sleep, the experience of unconsciousness is recounted publicly, and death, too, becomes public because the dead man is accessible through the *tonghés*.

The directness of contact between man and gods again emphasizes the unity of cosmos, society, and man. Within this unity, the sharp division of a male sphere from a female sphere is found. These quite coordinate spheres, in the other-worlds as in the hither-world, in religion as in socio-economic life, are linked through the household.

In conclusion, I would like briefly to review the major dimensions of Yaruro ideology. We may state these as a set of propositions, each presenting a major dimension of the ideology.

1. Cosmic structure. ***The cosmos is static, limited, concrete, and internally continuous in that no barriers separate man and his society in the physical world from the nonphysical world.*** The parts of the universe together form a rather rigid, symmetrical, architectonic structure, although each individual Yaruro may vary the description of the whole to suit his particular taste. All parts are of roughly coordinate importance. The major motions of nature, such as thunder and lightning, the revolutions of sun and moon, are often embodied, personalized, and independently operating entities, moved by semi-human motivations.

2. The good. ***Goodness inheres generally in the cosmos as a system. The goodness manifests itself in understood causes and concretely and describably known parts of the cosmos which, whether places, persons, or things, are given exact locations.*** Conversely all known and localizable objects, persons, or places and understood causes are generally good.

3. The not-good. ***Evil, which is not polar to good, finds its locus in specific persons, things, or events inside or outside the cosmos, and is manifest in specific results. The underlying causes of evil, however, are inac-***

7: Leeds E-4, 5 (1958) 1964 SS19 Yaruro SS19

Second is the rate of deculturation. It is quite clear from comparing the material culture items observed by Petrullo with those that I observed, as well as from the present distribution of culture traits, which shows a gradient of trait loss as one goes from less acculturated to more acculturated groups, that the Yaruro once had a more elaborate culture content than at present. Though temporal extrapolations backwards can of course only be securely made by means of the written historical sources, items gleaned here and there from sources so far examined tend to confirm the inference from spatial distributions.[6] The implication of this is that the Yaruro were formerly considerably more complex, at least in their cultural content if not also in their cultural structure, than at the periods of ethnographic observation.

Third, a series of arguments concerning the ecological relations of the Yaruro to the land, and of the various tribes to each other and the food supply, could be presented which would suggest ecological specialization by tribal or subtribal groups among the Yaruro, Sáliva, Guahibo, Kuiva, Achagua, and Otomaco, all in a complex system (cf. Kirchhoff, 1948 *b*).

Fourth, an interesting ecological argument can be made which would resolve the disagreement about horticulture: that Petrullo's statement regarding horticulture might possibly be correct for the small, highly special area he studied and — the Orinoco sand bars and the estuary of the Capanaparo River in which wet-season flooding appears to be exceedingly extensive, hence sharply limiting horticultural possibilities — but that they do not apply to other zones of the llanos which do not have the ecological peculiarities of the river-mouth area.[7] I have discussed some aspects of this in previous publications, especially with regard to the importance of flooding, the area of gallery forest available for horticulture, and the pattern of transhumance (Leeds, 1961 *a*, especially pp. 13-18). An ecological-geographical survey of the entire region between the Orinoco highlands and the Andean spurs to the west is needed.

III

We may now turn to the question of written historical evidences. No published work on the Yaruro or the llanos has made use of much more than a dozen

[6] Cf. Crévaux, 1883: 570; Carriazo, 1910: 59; Acosta Saignes, 1961: 97, etc., as well as the loss of culture traits observable between Petrullo's and my visits.

[7] That this area is rather unique is clearly indicated by many maps which represent it as entirely flooded or as a welter of water-ways (cf. Gumilla, 1791). Acosta Saignes, in a foreword to Carvajal, points out that it was quite simple to mistake one river for another since, at least during the rainy season, they all flowed into each other near the mouth. The flooding makes any ordinary gardening impossible for a large part of the year. The hypothesis tends, however, to be contradicted by Le Besnerais's findings (1934; also, Leeds, 1961 *a*). It may be noted that in the almost absolutely flat Guachara area, between the Cunaviche and Arauca rivers, at the Indian village of Palmarito- much of the llanos floods. The loamy-mud soils are excellent for crops, but crops are only grown in those areas which remain a few inches or a foot or two above highest rainy-season water-level.

7: Leeds E-4, 5 (1958) 1964 SS19 Yaruro SS19
Guahibo SC14

Y
Petrullo's own linguistic data includes the words for corn, *(pwe)*, manioc 174
(per), and other planted foods. The words for corn and manioc are certainly 142
not word borrowings from Spanish. This tends to confirm the hypothesis of 241
an aboriginal presence at least of these crops.

A second point is that Yaruro and Guahibo subsistence is transhumant, G
consisting of a wet-season gardening predominance and a dry-season hunting Y
and/or fishing predominance. Guahibo, both presently and in various historical 174
sources,[12] are described as being horticulturalists as well as hunters. It is of 42
first importance to note which season is being discussed when the tribal sub- 241
sistence is being described. With this sort of transhumance, one would expect the decriptions in the literature to disagree; as they do, according to the season of description. Similarly there is much local ecological variation, which appears to determine variations in the predominance of horticulture or hunting or fishing or collecting.

Third, the various tribes — Yaruro, Guahibo, Kuiva, Sáliva, Achagua, and G
possibly the Otomaco, as well as more distant groups -- maintained a complex 721
ecological relationship to llanos and extra-llanos resources by means of three 433
major institutions, trade, war, and raiding. For example Kuiva, described by my Yaruro informants and others as being "muy brabos",[13] even today raid both Guahibo and Yaruro villages, but apparently only when these are well supplied, *after* harvesting (Reichel-Dolmatoff, 1961). That is, they drain off a certain amount of the harvest surplus (cf. Leeds 1961*a*: 23) from the horticultural groups. With this food, they are able to maintain a larger population in the hunting areas away from the rivers, which they regularly inhabit. Presumably it also compels or encourages the groups concerned to produce more as a hedge against such depredations, thus contributing to overall population maximinization. The raiding pattern may also account for the use of green corn as remarked before.

At the same time, the Guahibo raid Yaruro gardens as the corn and manioc- G
ripen, but are limited from so doing by the frequent presence of Yaruro in 174
their gardens during the harvest period and by the distance of the gardens 721
from the Guahibo villages. The Guahibo were also reported as formerly having carried on extensive warfare, which, it is my guess, had a subsistence foundation (cf. Kirchhoff, 1948*b*). The peaceable Yaruro, on the other hand, have ap- Y
parently always done a considerable amount of trading up and down river in [439]
their canoes. Trade is also reflected archeologically in the stone artifacts mentioned above, since the kinds of stones used are not found in the llanos and must come from extra-llanos sources.

In short, the entire llanos area appears to me a complex ecological system Y
involving hunting, gathering, fishing, and horticulture, with trade, raiding, 174
182

[12] Cf. Crévaux, 1883; Marcano, 1883; Reichel-Dolmatoff, 1944; Vela, 1889; Wilbert, 1957.

[13] Cf. Reichel-Dolmatoff, 1961. He described the generally harsh behavior of the men, the raiding pattern, and the rough manhandling he received from the women.

7: Leeds E-4, 5 (1958) 1964 SS19 Yaruro SS19

and warfare as supra-tribal distribution mechanisms. It is interesting to note that the cultural characteristics ascribed to each of the peoples — "warlike," "peaceable," "brabo" — are ecologically funcional, in that they mirror value orientations which tend to drive people to maximize the food resources in ways appropriate to their socio-ecological environments.

Fourth, the evidence seems to me at present to point to the existence throughout the area, of pre-hispanic horticulture, enjoyed by at least some groups within each tribe, if not by all groups in part of every year. The evidence comes from the reports of travellers, missionaries, and from the archeological remnants, such as they at present are. The main Spanish and Venezuelan acculturational effects with respect to subsistence appear to have been the introduction of iron tools; seeds and plants not of native origin, such as sugar cane and bananas; and, here and there, cattle, pigs, or chickens.

Fifth, the evidence suggests a steady deculturation in an area capable of maintaining a more elaborate level of culture. One may hypothesize either that groups like the Yaruro came into the area with a level of culture reflected by the Arauquín-style remants and then gradually deculturated both pre-hispanically and in post-conquest times, to their present level, or that they intruded into such a culture at a time when they themselves were at a more elaborate level, and then deculturated largely under Spanish influence. It will probably be possible to shed light on this question with the historical data.

In summary, if these hypotheses are correct, the entire interpretation of the llanos area between the Andes and the Orinoco highlands, as well as of other nearby areas assertedly inhabited by so-called marginal tribes, is quite different from that presented by the *Handbook of South American Indians*. The marginals of northern South America seem to evanesce, and a picture of a highly complex ecological system in which horticulture is of central importance, even if not quantitatively predominant in this ecologically restricted area, appears. This picture seems to conform better to the recent archeological hypotheses of Cruxent and Rouse (1958-1959), to the historical mentions of horticulture, to the presently scanty archeological and linguistic materials, and to more recent ethnological data.

I have not, as yet, been able to make any determination whatever with respect to clanship, totemism, or matricross-cousin marriage. I hope that with a study of the word lists discovered and with possible older ethnographic data that this problem may be resolved. My own field data suggests an organization into demes with bilateral marriages between cross-cousins or between an ego and his parallel cousin's offspring. This interpretation incidentally tallies with, or at least does not contradict, the data, such as the genealogies, kin terminology, and locality features described by Petrullo in all pasages where inferences and assertions as to the existence of these institutions do not occur.